REMARKS

Claims 1-7 remain pending in the present application. Reconsideration and allowance for all of the claims in the present application as amended are earnestly solicited in view of the following remarks.

Claims 1, 2, and 6 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,898,179 to Smick et al., and claims 3-5, and 7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Smick et al. These rejections are respectfully traversed.

Claims 1 and 6 of the present application are respectively directed to an apparatus and a method for ion implanting a workpiece. The apparatus and method are particularly suited for ion implantation during processing of semiconductor wafers. The claimed apparatus comprises an ion source, a workpiece holder and a rotation control structure for rotating the workpiece to orient the workpiece at a selected angle of rotation for a desired implant surface. The apparatus further comprises a beam measuring device for scanning along and in alignment (co-planar) with the intended implant surface. An example of this feature is best illustrated in Figs. 4 and 5 where a beam measuring device 430, such as a Faraday cup 430, moves in a line of travel 500 that is parallel to the plane of the intended implant surface 428. By scanning and measuring the beam along the implant surface, the claimed apparatus provides an improved beam control because a uniform measurement of the beam is performed . Similarly, the claimed method measures the effective ion beam intensity along the second plane (the plane in alignment or co-planar with the workpiece to be implanted) to provide the improved beam control by such a uniform measurement .

Smick et al. is relied upon to disclose an apparatus for controlling a workpiece including a parallel magnetically scanned ion beam 13, a workpiece holder 10, and Faraday assemblies 16 and 72 which include Faraday cups 71 and 71' as illustrated in Figs. 1 and 5. The Faraday assemblies 16 and 72 are positioned in the beam path at identical X' positions but with different Z' positions. The phase angle difference between measurements of the beam position of the two Faraday assemblies 16 and 72 is used to calculate the deviation from parallel of the scanned rays of the ion beam 13. Neither of these positions ensures alignment with the intended implant surface of the workpiece. In contrast, the beam measuring device claimed in the present

application, scans, measures, and adjusts the ion beam along an intended location of the implant surface for realizing improved beam control. Smick et al. neither discloses nor suggests scanning, measuring and adjusting the beam along the intended location of the implant surface as claimed in the present application. Accordingly, it is respectfully submitted that claims 1-7 of the present application patentably define over Smick et al. and it is respectfully requested that these rejections be reconsidered and withdrawn.

In view of these amendments and for all of the above stated reasons, it is respectfully submitted that all of the outstanding rejections have been overcome. Therefore, it is requested that claims 1-7 of the present application be passed to issue.

If any issues remain unresolved, the Examiner is requested to telephone the undersigned attorney.

Please charge any additional fees or credit any overpayments to deposit account No. 50-0896.

Respectfully submitted,
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